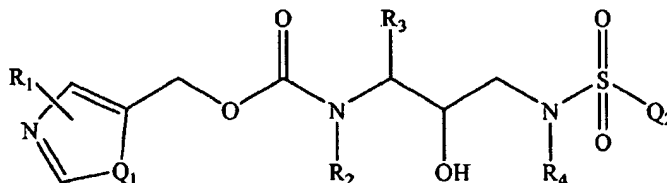


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## CLAIMS

1. The use of sulfonamide derivatives having the general formula



or a *N*-oxide, salt, stereoisomeric form, racemic mixture, prodrug or esters thereof,

5 wherein

$Q_1$  is -S- or -O-;

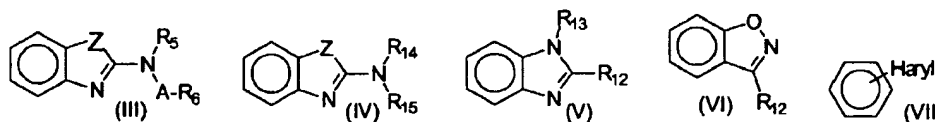
$R_1$  is hydrogen,  $C_{1-6}$ alkyl, hydroxy, amino, halogen, amino $C_{1-4}$ alkyl and mono- or di( $C_{1-4}$ alkyl)amino;

$R_2$ ,  $R_{14}$  and  $R_{15}$  are, each independently, hydrogen or  $C_{1-6}$ alkyl;

10  $R_3$  is  $C_{1-6}$ alkyl, aryl,  $C_{3-7}$ cycloalkyl,  $C_{3-7}$ cycloalkyl $C_{1-4}$ alkyl, or aryl $C_{1-4}$ alkyl;

$R_4$  is hydrogen,  $C_{1-4}$ alkyloxycarbonyl, carboxyl, optionally mono- or disubstituted aminocarbonyl, mono- or di( $C_{1-4}$ alkyl)aminocarbonyl,  $C_{3-7}$ cycloalkyl,  $C_{2-6}$ alkenyl,  $C_{2-6}$ alkynyl or  $C_{1-6}$ alkyl optionally substituted with one or more substituents each independently selected from aryl, Het<sup>1</sup>, Het<sup>2</sup>,  $C_{3-7}$ cycloalkyl,  $C_{1-4}$ alkyloxy-carbonyl, carboxyl, aminocarbonyl, mono- or di( $C_{1-4}$ alkyl)aminocarbonyl, aminosulfonyl,  $C_{1-4}$ alkylS(=O)<sub>t</sub>, hydroxy, cyano, halogen or amino optionally mono- or di-substituted where the substituents are each independently selected from  $C_{1-4}$ alkyl, aryl, aryl $C_{1-4}$ alkyl,  $C_{3-7}$ cycloalkyl,  $C_{3-7}$ cycloalkyl $C_{1-4}$ alkyl, Het<sup>1</sup>, Het<sup>2</sup>, Het<sup>1</sup> $C_{1-4}$ alkyl and Het<sup>2</sup> $C_{1-4}$ alkyl;

20  $Q_2$  is a radical of formula (III), (IV), (V), (VI), or (VII)



and is be attached to the remainder of the molecule via any available carbon atom of the phenyl or fused phenyl ring,

$Z$  is O or S;

25  $A$  is  $C_{1-6}$ alkanediyl, -C(=O)-, -C(=S)-, -S(=O)<sub>2</sub>-,  $C_{1-6}$ alkanediyl-C(=O)-,  $C_{1-6}$ alkanediyl-C(=S)- or  $C_{1-6}$ alkanediyl-S(=O)<sub>2</sub>-; wherein the point of attachment to the nitrogen atom is the  $C_{1-6}$ alkanediyl group in those moieties containing said group;

30  $R_5$  is hydrogen, hydroxy,  $C_{1-6}$ alkyl, Het<sup>1</sup> $C_{1-6}$ alkyl, Het<sup>2</sup> $C_{1-6}$ alkyl, or amino $C_{1-6}$ alkyl wherein the amino group may optionally be mono- or di-substituted with  $C_{1-4}$ alkyl;

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- $R_6$  is  $C_{1-6}$ alkyloxy,  $Het^1$ ,  $Het^1oxy$ ,  $Het^2$ ,  $Het^2oxy$ , aryl, aryloxy or amino; and in case -A- is other than  $C_{1-6}$ alkanediyl then  $R_6$  may also be  $C_{1-6}$ alkyl,  $Het^1C_{1-4}$ alkyl,  $Het^1oxyC_{1-4}$ alkyl,  $Het^2C_{1-4}$ alkyl,  $Het^2oxyC_{1-4}$ alkyl, aryl $C_{1-4}$ alkyl, aryloxy $C_{1-4}$ alkyl or amino $C_{1-4}$ alkyl; wherein each of the amino groups in the definition of  $R_6$  may optionally be substituted with one or more substituents selected from  $C_{1-4}$ alkyl,  $C_{1-4}$ alkylcarbonyl,  $C_{1-4}$ alkyloxycarbonyl, aryl, arylcarbonyl, aryloxycarbonyl,  $Het^1$ ,  $Het^2$ , aryl $C_{1-4}$ alkyl,  $Het^1C_{1-4}$ alkyl or  $Het^2C_{1-4}$ alkyl;; and
- $R_5$  and -A- $R_6$  taken together with the nitrogen atom to which they are attached may also form  $Het^1$  or  $Het^2$ ;
- $R_{12}$  is hydrogen,  $-NH_2$ ,  $-N(R_5)(AR_6)$ ,  $-C_{1-6}$ alkyl or  $C_{1-6}$ alkyl-W- $R_{17}$ , wherein each  $C_{1-6}$ alkyl may optionally be substituted with halogen, hydroxy, aryl,  $Het^1$ ,  $Het^2$ , amino or mono- or di- $(C_{1-4}$  alkyl)amino;
- W is oxy, carbonyl, oxycarbonyl, carbonyloxy, oxycarbonyloxy, amino, aminocarbonyl, carbonylamino or sulphur;
- $R_{13}$  is hydrogen or  $C_{1-6}$ -alkyl optionally substituted with a substituent selected from the group consisting of aryl,  $Het^1$ ,  $Het^2$ , hydroxy, halogen or amino, wherein the amino group may be optionally be mono- or di-substituted with  $C_{1-4}$ alkyl;
- $R_{17}$  is  $C_{1-6}$ alkyl, aryl,  $Het^1$  or  $Het^2$ ;
- Haryl is an aromatic monocyclic, bicyclic or tricyclic heterocycle having 3 to 14 ring members which contains one or more heteroatom ring members selected from nitrogen, oxygen and sulfur and which may optionally be substituted on (i) one or more carbon atoms by a substituent selected from the group consisting of  $C_{1-6}$ alkyl, halogen, hydroxy, optionally mono- or di-substituted amino, nitro, cyano, halo $C_{1-6}$ alkyl, carboxyl,  $C_{3-7}$ cycloalkyl, optionally mono- or disubstituted aminocarbonyl, methylthio, methylsulfonyl, aryl,  $-(R_{7a})_n-M-R_{7b}$ ,  $Het^1$  and  $Het^2$ ; wherein the optional substituents on any amino function in the above group of substituents are independently selected from  $R_5$  and -A- $R_6$ ; and on (ii) a nitrogen atom if present by hydroxy or -A- $R_6$ ;
- $R_{7a}$  is  $C_{1-6}$ alkanediyl optionally substituted with one or more substituents selected from, halogen,  $C_{1-4}$ alkylcarbonyl,  $C_{1-4}$ alkyloxycarbonyl, aryl, arylcarbonyl, aryloxycarbonyl,  $Het^1$  or  $Het^2$ ;
- $R_{7b}$  is  $C_{1-6}$ alkyl optionally substituted with one or more substituents selected from halogen,  $C_{1-4}$ alkylcarbonyl,  $C_{1-4}$ alkyloxycarbonyl, aryl, arylcarbonyl, aryloxycarbonyl,  $Het^1$  or  $Het^2$ ;
- $R_8$  is hydrogen,  $C_{1-6}$ alkyl,  $C_{2-6}$ alkenyl, aryl $C_{1-6}$ alkyl,  $C_{3-7}$ cycloalkyl,  $C_{3-7}$ cycloalkyl $C_{1-6}$ alkyl, aryl,  $Het^1$ ,  $Het^1C_{1-6}$ alkyl,  $Het^2$  or  $Het^2C_{1-6}$ alkyl;
- M is defined by  $-C(=O)-$ ,  $-O-C(=O)-$ ,  $-C(=O)-O-$ ,  $-CH_2-CHOH-$ ,  $-CHOH-CH_2-$ ,

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$-\text{NR}_8-\text{C}(=\text{O})-$ ,  $-(\text{C}=\text{O})-\text{NR}_8-$ ,  $-\text{S}(=\text{O})_2-$ ,  $-\text{O}-$ ,  $-\text{S}-$ ,  $-\text{O}-\text{S}(=\text{O})_2-$ ,  $-\text{S}(=\text{O})_2-\text{O}-$ ,  $-\text{NR}_8-\text{S}(=\text{O})_2$  or  $-\text{S}(=\text{O})_2-\text{NR}_8-$ ;

$n$  is zero or 1;

for the manufacture of a medicament useful for inhibiting HCV activity in a mammal  
5 infected with HCV.

2. The use as claimed in claim 1 wherein  $\text{Q}_2$  is a radical of formula (III).

10 3. The use as claimed in claim 1 wherein  $\text{Q}_2$  is a radical of formula (IV).

4. The use as claimed in claim 1 wherein  $\text{Q}_2$  is a radical of formula (V).

5. The use as claimed in claim 1 wherein  $\text{Q}_2$  is a radical of formula (VI).

15 6. The use as claimed in claim 1 wherein  $\text{Q}_2$  is a radical of formula (VII).

7. The use as claimed in claim 2 wherein A is  $-\text{C}(=\text{O})-$  or  $\text{C}_{1-6}$ alkanediyl,  $\text{R}_5$  is hydrogen or  $\text{C}_{1-6}$ alkyl; or taken together with  $-\text{A}-\text{R}_6$  and with the nitrogen atom to which it is attached forms a  $\text{Het}^1$ ;  $\text{R}_6$  is  $\text{C}_{1-6}$ alkyloxy,  $\text{Het}^1$ ,  $\text{Het}^2$ , aryl or amino; and in case -A- is other than  $\text{C}_{1-6}$ alkanediyl then  $\text{R}_6$  may also be  $\text{C}_{1-6}$ alkyl,  $\text{Het}^1\text{C}_{1-4}$ alkyl,  $\text{Het}^2\text{C}_{1-4}$ alkyl, aryl $\text{C}_{1-4}$ alkyl or amino $\text{C}_{1-4}$ alkyl; wherein each of the amino groups in the definition of  $\text{R}_6$  may optionally be substituted with one or more substituents selected from  $\text{C}_{1-4}$ alkyl, aryl $\text{C}_{1-4}$ alkyl,  $\text{Het}^1\text{C}_{1-4}$ alkyl or  $\text{Het}^2\text{C}_{1-4}$ alkyl.

25 8. The use as claimed in claim 3 wherein  $\text{R}^{14}$  and  $\text{R}^{15}$  are both hydrogen or are both methyl.

9. The use as claimed in claim 4 wherein  $\text{R}_{12}$  is hydrogen and  $\text{R}_{13}$  is hydrogen or  $\text{C}_{1-6}$ alkyl optionally substituted with aryl.  
30

10. The use as claimed in claim 6 wherein Haryl is thiazolyl or oxazolyl which may both optionally be substituted with  $\text{C}_{1-6}$ alkyl or  $\text{Het}^2$ amino.

35 11. The use as claimed in any one of claims 1 to 10 wherein  $\text{R}_2$  is hydrogen,  $\text{R}_3$  is aryl $\text{C}_{1-4}$ alkyl and  $\text{R}_4$  is  $\text{C}_{1-6}$ alkyl.

12. The use as claimed in claim 1 wherein the compound is  
40 {3-[(2-Acetyl-amino-benzooxazole-6-sulfonyl)-isobutyl-amino]-1-benzyl-2-hydroxy-propyl}-carbamic acid thiazol-5-ylmethyl ester;

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- (6-{{2-Hydroxy-4-phenyl-3-(thiazol-5-ylmethoxycarbonylamino)-butyl}-isobutyl-sulfamoyl}-benzooxazol-2-yl)-carbamic acid ethyl ester;
- [1-Benzyl-2-hydroxy-3-{{2-{{(6-hydroxy-pyridine-3-carbonyl)-amino}-benzooxazole-6-sulfonyl}-isobutyl-amino}-propyl]-carbamic acid thiazol-5-ylmethyl ester;
- [1-Benzyl-2-hydroxy-3-(isobutyl-{{2-{{(pyridine-3-carbonyl)-amino}-benzooxazole-6-sulfonyl}-amino}-propyl]-carbamic acid thiazol-5-ylmethyl ester;
- {1-Benzyl-2-hydroxy-3-[isobutyl-(2-pyrrolidin-1-yl-benzooxazole-6-sulfonyl)-amino]-propyl}-carbamic acid thiazol-5-ylmethyl ester;
- [1-Benzyl-2-hydroxy-3-(isobutyl-{{2-{{methyl-(2-pyrrolidin-1-yl-ethyl)-amino}-benzooxazole-6-sulfonyl}-amino}-propyl]-carbamic acid thiazol-5-ylmethyl ester;
- [1-Benzyl-2-hydroxy-3-(isobutyl-{{2-{{2-(4-methyl-piperazin-1-yl)-acetylamino}-benzooxazole-6-sulfonyl}-amino}-propyl]-carbamic acid thiazol-5-ylmethyl ester;
- [1-Benzyl-2-hydroxy-3-(isobutyl-{{2-{{methyl-(5-oxo-pyrrolidine-2-carbonyl)-amino}-benzooxazole-6-sulfonyl}-amino}-propyl]-carbamic acid thiazol-5-ylmethyl ester;
- [1-Benzyl-2-hydroxy-3-(isobutyl-{{2-{{methyl-(pyridine-4-carbonyl)-amino}-benzooxazole-6-sulfonyl}-amino}-propyl]-carbamic acid thiazol-5-ylmethyl ester;
- [1-Benzyl-3-{{2-{{(furan-3-carbonyl)-methyl-amino}-benzooxazole-6-sulfonyl}-isobutyl-amino}-2-hydroxy-propyl]-carbamic acid thiazol-5-ylmethyl ester;
- [1-Benzyl-2-hydroxy-3-(isobutyl-{{2-{{(1-methyl-pyrrolidine-2-carbonyl)-amino}-benzooxazole-6-sulfonyl}-amino}-propyl]-carbamic acid thiazol-5-ylmethyl ester;
- {1-Benzyl-3-{{(3-benzyl-3H-benzimidazole-5-sulfonyl)-isobutyl-amino}-2-hydroxy-propyl}-carbamic acid thiazol-5-ylmethyl ester;
- {3-{{(2-Amino-benzothiazole-6-sulfonyl)-isobutyl-amino}-1-benzyl-2-hydroxy-propyl}-carbamic acid thiazol-5-ylmethyl ester;
- (1-Benzyl-3-{{2-{{2-(dimethylamino-ethylamino)-benzothiazole-6-sulfonyl}-isobutyl-amino}-2-hydroxy-propyl)-carbamic acid thiazol-5-ylmethyl ester;
- (1-Benzyl-2-hydroxy-3-{{isobutyl-{{2-{{2-(pyrrolidin-1-yl-ethylamino)-benzothiazole-6-sulfonyl]-amino}-propyl)-carbamic acid thiazol-5-ylmethyl ester;

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- (1-Benzyl-2-hydroxy-3-{isobutyl-[2-(2-pyrrolidin-1-yl-ethylamino)-benzothiazole-6-sulfonyl]-amino}-propyl)-carbamic acid thiazol-5-ylmethyl ester trifluoroacetate salt;
- 5 (1-Benzyl-3-{[2-(3-dimethylamino-propylamino)-benzothiazole-6-sulfonyl]-isobutyl-amino}-2-hydroxy-propyl)-carbamic acid thiazol-5-ylmethyl ester;
- (1-Benzyl-2-hydroxy-3-{isobutyl-[2-(2-piperazin-1-yl-ethylamino)-benzothiazole-6-sulfonyl]-amino}-propyl)-carbamic acid thiazol-5-ylmethyl ester;
- 10 {3-[(2-Amino-benzooxazole-6-sulfonyl)-isobutyl-amino]-1-benzyl-2-hydroxy-propyl}-carbamic acid thiazol-5-ylmethyl ester;
- {3-[(3H-Benzoimidazole-5-sulfonyl)-isobutyl-amino]-1-benzyl-2-hydroxy-propyl}-carbamic acid thiazol-5-ylmethyl ester;
- (3-{[2-(Acetyl-methyl-amino)-benzothiazole-6-sulfonyl]-isobutyl-amino}-1-benzyl-2-hydroxy-propyl)-carbamic acid thiazol-5-ylmethyl ester;
- 15 {3-[(2-Amino-benzooxazole-6-sulfonyl)-pyridin-2-ylmethyl-amino]-1-benzyl-2-hydroxy-propyl}-carbamic acid thiazol-5-ylmethyl ester trifluoroacetate salt;
- [1-Benzyl-2-hydroxy-3-(isobutyl-{2-[(5-oxo-pyrrolidine-2-carbonyl)-amino]-benzooxazole-6-sulfonyl}-amino)-propyl]-carbamic acid thiazol-5-yl methyl ester;
- 20 [1-Benzyl-2-hydroxy-3-(isobutyl-{2-[(5-oxo-pyrrolidine-2-carbonyl)-amino]-benzooxazole-6-sulfonyl}-amino)-propyl]-carbamic acid thiazol-5-yl methyl ester;
- [1-Benzyl-3-({2-[(furan-3-carbonyl)-amino]-benzooxazole-6-sulfonyl}-isobutyl-amino)-2-hydroxy-propyl]-carbamic acid thiazol-5-ylmethyl ester;
- 25 [1-Benzyl-2-hydroxy-3-(isobutyl-{2-[(1-methyl-piperidine-4-carbonyl)-amino]-benzooxazole-6-sulfonyl}-amino)-propyl]-carbamic acid thiazol-5-ylmethyl ester;
- [1-Benzyl-2-hydroxy-3-(isobutyl-{2-[(pyridine-2-carbonyl)-amino]-benzooxazole-6-sulfonyl}-amino)-propyl]-carbamic acid thiazol-5-ylmethyl ester;
- 30 {3-[(2-Amino-benzooxazole-6-sulfonyl)-isobutyl-amino]-1-benzyl-2-hydroxy-propyl}-carbamic acid 2-chloro-thiazol-5-ylmethyl ester;
- (1-Benzyl-3-{[2-(2-dimethylamino-acetyl-amino)-benzooxazole-6-sulfonyl]-isobutyl-amino}-2-hydroxy-propyl)-carbamic acid thiazol-5-ylmethyl ester;
- 35 {1-Benzyl-2-hydroxy-3-[isobutyl-(2-piperazin-1-yl-benzooxazole-6-sulfonyl)-amino]-propyl}-carbamic acid thiazol-5-ylmethyl ester;
- {1-Benzyl-2-hydroxy-3-[isobutyl-(2-piperidin-1-yl-benzooxazole-6-sulfonyl)-amino]-propyl}-carbamic acid thiazol-5-ylmethyl ester;

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- {1-Benzyl-2-hydroxy-3-[isobutyl-(2-{2-[methyl-(2-pyrrolidin-1-yl-ethyl)-amino]-acetyl-amino}-benzoxazole-6-sulfonyl)-amino]-propyl}-carbamic acid thiazol-5-ylmethyl ester;
- 5 {1-Benzyl-3-[(2-dimethylamino-benzoxazole-6-sulfonyl)-isobutyl-amino]-2-hydroxy-propyl}-carbamic acid thiazol-5-ylmethyl ester;
- {3-[(2-Amino-benzoxazole-6-sulfonyl)-isobutyl-amino]-1-benzyl-2-hydroxy-propyl}-carbamic acid oxazol-5-ylmethyl ester;
- 10 [1-Benzyl-2-hydroxy-3-(isobutyl-{2-[(pyridine-4-carbonyl)-amino]-benzoxazole-6-sulfonyl}-amino)-propyl]-carbamic acid thiazol-5-ylmethyl ester;
- [1-Benzyl-2-hydroxy-3-(isobutyl-{2-[methyl-(pyridine-2-carbonyl)-amino]-benzoxazole-6-sulfonyl}-amino)-propyl]-carbamic acid thiazol-5-ylmethyl ester;
- 15 [1-Benzyl-2-hydroxy-3-(isobutyl-{2-[methyl-(1-methyl-piperidine-3-carbonyl)-amino]-benzoxazole-6-sulfonyl}-amino)-propyl]-carbamic acid thiazol-5-ylmethyl ester;
- [1-Benzyl-2-hydroxy-3-(isobutyl-{2-[methyl-(1-methyl-piperidine-4-carbonyl)-amino]-benzoxazole-6-sulfonyl}-amino)-propyl]-carbamic acid thiazol-5-ylmethyl ester;
- 20 [1-Benzyl-3-({2-[(2-chloro-pyridine-4-carbonyl)-methyl-amino]-benzoxazole-6-sulfonyl}-isobutyl-amino)-2-hydroxy-propyl]-carbamic acid thiazol-5-ylmethyl ester;
- [1-Benzyl-2-hydroxy-3-(isobutyl-{2-[methyl-(1-methyl-pyrrolidine-2-carbonyl)-amino]-benzoxazole-6-sulfonyl}-amino)-propyl]-carbamic acid thiazol-5-ylmethyl ester trifluoroacetate salt;
- 25 {1-Benzyl-2-hydroxy-3-[isobutyl-(3-phenethyl-3H-benzoimidazole-5-sulfonyl)-amino]-propyl}-carbamic acid thiazol-5-ylmethyl ester;
- {1-Benzyl-2-hydroxy-3-[isobutyl-(3-isobutyl-3H-benzoimidazole-5-sulfonyl)-amino]-propyl}-carbamic acid thiazol-5-ylmethyl ester;
- 30 [1-Benzyl-2-hydroxy-3-(isobutyl-{4-[2-(pyridin-4-ylamino)-thiazol-4-yl]-benzenesulfonyl}-amino)-propyl]-carbamic acid thiazol-5-ylmethyl ester;
- (1-Benzyl-2-hydroxy-3-{isobutyl-[4-(2-methyl-oxazol-4-yl)-benzenesulfonyl]-amino}-propyl)-carbamic acid thiazol-5-ylmethyl ester or
- 35 {3-[(2-Amino-benzoxazole-6-sulfonyl)-isobutyl-amino]-1-benzyl-2-hydroxy-propyl}-carbamic acid thiazol-5-ylmethyl ester;
- or a N-oxide, salt, stereoisomeric form thereof.

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13. The use as claimed in any one of claims 1 to 12 wherein the mammal is co-infected with HIV and HCV.

14. The use of a sulfonamide as defined in any one of claim 1 to 12 in a  
5 pharmaceutical composition aimed to treat or combat HCV infection.

15. A combination of a sulfonamide as defined in any one of claim 1 to 12 with another anti-HCV agent.

10 16. A combination as claimed in claim 15 further comprising an anti-HIV agent.